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| 09/943,355 | 08/31/2001 | Satoshi Arakawa | Q66024 | 8635 |

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EXAMINER

HANNAHER, CONSTANTINE

ART UNIT PAPER NUMBER

2878

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,355

Applicant(s)

ARAKAWA, SATOSHI

Examiner

Constantine Hannaher

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7, 9-13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome *et al.* (US005115132A) in view of Arakawa (JP11-38533A).

With respect to independent claim 1, Saotome *et al.* suggests a method corresponding to the illustrated radiation image recording and read-out apparatus 200 (Fig. 10) which would comprise the steps of (i) supporting a stimuable phosphor sheet 226 at a position for image recording, (ii) exposing the one surface of the sheet 226 to radiation, (iii) performing an image read-out operation of the recited type with stimulating rays 252 and photoelectric detection 254 of the emitted light 40, and (iv) releasing energy remaining on the sheet 226 using erasing light sources 261 located in close vicinity to the stimuable phosphor sheet 226, but they are not sheet-shaped or on the side of the sheet 226 exposed to radiation. Arakawa shows that a sheet-shaped erasing light source 30 located in close vicinity to the stimuable phosphor sheet 20 and on a side of the one surface of the sheet supported at the position for image recording (of object 50) which is exposed to the radiation and furthermore irradiating erasing light to an entire area of the sheet 20 is known. Because the source 30 in the method of Arakawa is between the source 11 and the sheet 20, its uniform transmissivity to radiation may be presumed. The sheet-shaped erasing light source 30 of Arakawa is plainly more compact than the bulky sources 261 of Saotome, and it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify the method of Saotome to comprise a sheet-shaped source erasing light in the location suggested by Arakawa since a smaller case 229 could be achieved that way.

With respect to dependent claim 2, the sheet-shaped erasing light source 30 suggested by Arakawa comprises an electroluminescence device (column 7, line 67). If the panel suggested by Arakawa is not in fact an organic electroluminescence device and the disclosure simply omits that characterization, then the choice of specifically an "organic" electroluminescence device must be considered a choice within the ordinary skill in the art in view of the known and effective performance of such a device to deliver light in erasing wavelengths.

With respect to dependent claim 3, Arakawa teaches that a source for producing the erasing light and a flat plate light guide for guiding the erasing light may be used (column 5, lines 1-3). The flat plate light guide suggested by Arakawa may be presumed to be transparent. The provision of additional erasing light sources is a choice within the ordinary skill in the art in view of the amount of erasing light desired. To the extent that the sheet-shaped erasing light source suggested by Arakawa would be on the side of the sheet 226 in the method of Saotome which is opposite to that of the image read-out means, the light transmission through the transparent sheet need not be exact and light diffusing properties would have been obvious to one of ordinary skill in the art in view of the desire for consistent application of erasing energy to the sheet and avoidance of, say, "hot spots" in the transparent sheet near the source(s).

With respect to dependent claim 4, having at least one surface of the transparent sheet suggested by Arakawa be a light diffusing surface in the method of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the surface, which equalization would have been

recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claim 5, having light diffusing particles dispersed throughout the transparent sheet suggested by Arakawa in the method of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the sheet, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claims 7/1, 7/2, 7/3, 7/4, and 7/5, the stimuable phosphor sheet 226 in the method of Saotome *et al.* in the embodiment of Fig. 10 is not kept stationary at the position for image recording, nor does the image read-out means move. Nevertheless, the configuration of the apparatus where the stimuable phosphor sheet is kept stationary at the position for image recording, and where the image read-out means moves (with the requisite unit 104 and means 140) is known from Fig. 9A of Saotome *et al.* and in view of the reduced overhang past the edge of the stimuable phosphor sheet (column 13, lines 14-16) and the compatibility with the sheet-shaped erasing light source 30 suggested by Arakawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made depending on the intended application and the desired performance to use such a configuration instead.

With respect to independent claim 9, Saotome *et al.* discloses a radiation image recording and read-out apparatus 200 (Fig. 10) comprising (i) an image recording section of the recited type for supporting a stimuable phosphor sheet 226, (ii) image read-out means of the recited type with stimulating rays 252 and photoelectrically detected 254 emitted light 40, and (iii) erasing light sources 261 located in close vicinity to the stimuable phosphor sheet 226, but they are not sheet-shaped or on the side of the sheet 226 exposed to radiation. Arakawa shows that a sheet-shaped erasing light

source **30** located in close vicinity to the stimuable phosphor sheet **20** and on a side of the one surface of the sheet supported at the position for image recording (of object **50**) which is exposed to the radiation and furthermore irradiating erasing light to an entire area of the sheet **20** is known. Because the source **30** in the apparatus of Arakawa is between the source **11** and the sheet **20**, its uniform transmissivity to radiation may be presumed. The sheet-shaped erasing light source **30** of Arakawa is plainly more compact than the bulky sources **261** of Saotome, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Saotome to comprise a sheet-shaped source erasing light in the location suggested by Arakawa since a smaller case **229** could be achieved that way.

With respect to dependent claim 10, the sheet-shaped erasing light source **30** suggested by Arakawa comprises an electroluminescence device (column 7, line 67). If the panel suggested by Arakawa is not in fact an organic electroluminescence device and the disclosure simply omits that characterization, then the choice of specifically an "organic" electroluminescence device must be considered a choice within the ordinary skill in the art in view of the known and effective performance of such a device to deliver light in erasing wavelengths.

With respect to dependent claim 11, Arakawa teaches that a source for producing the erasing light and a flat plate light guide for guiding the erasing light may be used (column 5, lines 1-3). The flat plate light guide suggested by Arakawa may be presumed to be transparent. The provision of additional erasing light sources is a choice within the ordinary skill in the art in view of the amount of erasing light desired. To the extent that the sheet-shaped erasing light source suggested by Arakawa would be on the side of the sheet **226** in the apparatus of Saotome which is opposite to that of the image read-out means, the light transmission through the transparent sheet need not be exact and light diffusing properties would have been obvious to one of ordinary skill in the art in

view of the desire for consistent application of erasing energy to the sheet and avoidance of, say, "hot spots" in the transparent sheet near the source(s).

With respect to dependent claim 12, having at least one surface of the transparent sheet suggested by Arakawa be a light diffusing surface in the apparatus of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the surface, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claim 13, having light diffusing particles dispersed throughout the transparent sheet suggested by Arakawa in the apparatus of Saotome would have been obvious to one of ordinary skill in the art at the time the invention was made as this is one known method of equalizing the delivery of light through the sheet, which equalization would have been recognized as useful with erasing light in view of the desire for consistent application of erasing energy.

With respect to dependent claims 15/9, 15/10, 15/11, 15/12, and 15/13, the stimuable phosphor sheet 226 in the apparatus of Saotome *et al.* in the embodiment of Fig. 10 is not kept stationary at the position for image recording, nor does the image read-out means move. Nevertheless, the configuration of the apparatus where the stimuable phosphor sheet is kept stationary at the position for image recording, and where the image read-out means moves (with the requisite unit 104 and means 140) is known from Fig. 9A of Saotome *et al.* and in view of the reduced overhang past the edge of the stimuable phosphor sheet (column 13, lines 14-16) and the compatibility with the sheet-shaped erasing light source 30 suggested by Arakawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made depending on the intended application and the desired performance to use such a configuration instead.

3. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome *et al.* and Arakawa as applied to claims 3, 4, or 5, or 11, 12, or 13 above, and further in view of Saotome (US004814616A).

With respect to dependent claims 6/3, 6/4, and 6/5, or 14/11, 14/12, and 14/13, although Arakawa discloses an erasing light source **30** which is separate from stimuable phosphor sheet **20**, Saotome shows that a stimuable phosphor sheet comprising a sheet-shaped transparent substrate, which also acts as the transparent sheet of a sheet-shaped erasing light source, overlaid with a stimuable phosphor layer is known (column 7, lines 24-29, see Fig. 5). In view of the compact arrangement and the direct application of erasing energy to the stimuable phosphor layer (also note that the erasing light source in Saotome is on the recited side of the stimuable phosphor layer **12**) it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus suggested by Saotome *et al.* and Arakawa to specify that the stimuable phosphor layer was on a substrate which acted as the transparent sheet of the erasing light source.

4. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saotome *et al.*, Arakawa and Saotome as applied to claims 7 and 15 above, and further in view of Ohyama *et al.* (US004767927A).

With respect to dependent claims 8 and 16, the image read-out means in the apparatus of Saotome *et al.* comprises a line sensor but the stimulating ray source irradiates an area of the stimuable phosphor sheet in a main scanning direction which is linear without being "linear" itself. Ohyama *et al.* shows that a linear stimulating ray source **30** is known (Ohyama *et al.* also shows a line sensor **28**). In view of the reduction in the number of moving parts, for example, through the use of a "linear" stimulating ray source as suggested by Ohyama *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method suggested by

Saotome *et al.*, Arakawa, and Saotome to comprise an image read-out unit with a linear stimulating ray source in place of the scanned point source.

Response to Submission(s)

5. This application has been published as US2002/0024032A1 on February 28, 2002.

Conclusion

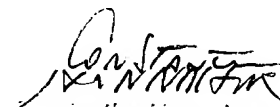
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arakawa (US006072855A) is considered to be equivalent to the applied reference despite the absence of a claim to foreign priority. Fukai *et al.* (US004849630A) confirms that light diffusion in the context of applying erasing light energy is known (column 8, lines 30-39).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ch
June 11, 2003


Constantine Hannaher
Primary Examiner